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The development of the statistical-the dialectical combination of "merge two for one" and "split in two"

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ABSTRACT

The cognitive function and transformation function of statistics realize the statistics of social demand, extending the statistical practice application, on the re-recognition will further promote the development of statistics and the application of statistics. Based on the integrated current statistics and the understanding of the related studies, with dynamic development, the understanding of the multi-dimensional three-dimensional perspective, using "merge two for one" and "split in two" materialist dialectical analysis, explores the statistics and generalized "statistical" science, statistics and methods, the combination of statistical and application, and we should follow on ontology and epistemology of statistics "merge two for one" and "split in two" law of the unity of opposites of dialectical development.

KEYWORDS

Statistical development; The cognitive function; "Merge two for one" and "split in two".



INTRODUCTION

Statistical results from the need of society, the development of the service to the society economy, the application of statistics revealed in all aspects of the social economic activities. From the earliest, people use "the chronicle of knotting" the count of activity, to the emergence of the population, wealth, statistics of military activities, and the subsequent formation of statistical thinking, the application of statistical methods, the establishment of statistical science. We see the statistical behavior of human beings have a tendency to shift from "spontaneously" to "consciously", statistics from the initial count function gradually to obtain enough information scientifically and to explore the object number structure, the change law of movement of the running function and scheme optimization, the object of information monitoring, feedback, select control scheme of the transformation function development.

It is just the statistics of the cognitive function and transformation function realize the statistics of social demand, extends the statistics applied to the practice of today's statistics has gradually penetrated into the economy, management, biology, medicine, ecology and other fields, plays an extremely important role. Under the generalized, statistics is all about learning knowledge. But also because of the breadth of statistical application, caused the people to question it. Statistics is constructed, and statistical methods of statistical prediction of paraphrasing, misguided, "to be counted" become a lot of people to "understanding" of "statistics" nowadays. Therefore, how to correct understanding of statistics and statistical statistics, applied statistics, development is the current us to explore and solve the problem.

The growth of existing study of statistics at home and abroad are increasing rapidly in recent years, the discussion of the main content that described of involving the history of statistics, statistics, statistical theory, method and application of the problem. One is in the study of statistical methods, current research mainly focuses on the application of statistical methods, investigation, statistics research methods, gene mapping statistical methods and so on three aspects of the research. Shi-wei Su, Nanyang Cheng (2007) based on statistical methods in the study of the social survey research and prospect, and statistics and analysis, multivariate data analysis and statistical methods such as causal analysis in the application of western sociology research, and puts forward that it has advanced several research directions currently: (1) The analysis of social network data and spatial data, such as in 1993, A. Massey and H. Denton using spatial statistical methods to study the residents in American society that because of racial barriers. (2) The processing of the original data, such as the map analysis of E. Cavley, the fixed theory method of M. Franzosi and the general rules of grammar of J. Roberts. (3) Model that used to simulate the macro and micro social process, although model belongs to the system engineering method, but it is on such key links as parameter estimation and model selection, you must use the statistics of the trial and error. David O.Siegmund, Michael S. Waterman, Peter Bickel (2010) is based on statistical method of genome research, is an important direction of the current us research.

Secondly, In statistical theory research, mainly focused on the research methods of statistical theory system research, the new branch of statistics and the new theory, frequency differences of school and bayesian school and the defects of classical statistics and so on. Jianjun Guo, Tiefeng Ma, Ji Yongjiao (2011)^[5] summarized the new progress in the study of based on statistical theory, put forward the relevant distribution theory and multivariate statistical theory, the research of nonparametric statistical model and so on.

Thirdly, in the research of statistical thinking, mainly focused on the study of statistical thinking concept, theory research, statistical thinking of Chinese and western differences in statistical research. In view of the concept of statistical thinking, Jinchang Li (2006)^[6], statistical nature of the formed thoughts, about how "why what statistics, statistics, statistics" thoughts, which is about the world view of methodology. Xiaozhang Wei, Genming Jiang (2003)^[14] from the discuss the mathematical idea of probability and statistics, statistical thinking of mathematics thinking includes random thoughts, axiomatic thought, the modeling ideas, as well as the combination of several line thought, sets, and mapping thought and its statistical inference thought. Maxine P. Fannkuch and Chris J. Ild, puts forward the four basic elements of statistical thinking is considering variation, data conversion, model construction and inference and problem synthesis and statistical interpretation.

Fourthly, in the history of statistical research, both reflect the overall statistics, statistical science, in the work of statistical system and statistical thoughts and other aspects of comprehensive development, and there are reflect all sorts of all sorts of statistical professional (specialist) professional (specialized subject) development. Shuhe Liu (1986) of our country ancient times from relevant statistical thinking and practice of summer to the qing dynasty systematically comb and complete. Pin Li (1984)^[11] put forward the relevant statistics of ancient China mainly has three aspects: the content of the legal system about login statistics and reporting aspects of the rule of law, about statistical work of the organization establishment, punishment of illegal ACTS.

Above all you can see, the academic circles on the related research of statistics in very wide, from longitudinal can see the statistics from the ancient and modern to the development of modern history; From lateral to see statistics in theoretical research and applied research in the field of development, and if the combination will be able to display a vertical development of the statistics, rather than just a general sense of partial and one-sided understanding and the understanding. Until today, the reason is the existence of the development of different statistical arguments, it is because of scholars from different areas based on the inherent limitation of knowledge. Indeed, their contribution to the development of statistics to be reckoned with, and their debate on statistics also pushes the continuous development of statistics in the contradiction and grandness, but to the understanding of the real statistics should be more comprehensive to understand, and cannot be biased, materialist dialectics provides us with a comprehensive understanding of knowing things method, are also proved by far the

most fundamental and most important scientific method. The essence of this method and the core is the law of the unity of opposites. For a long time, it is widely believed that the two analysis methods is the correct expression of the law of the unity of opposites, but then someone put forward "split in two, merge two for one" is the complete description of the law of unity opposites. In real life, people's knowledge of things is based on practice, on the basis of through the combination of the perceptual and the rational, the combination of analysis and synthesis, the combination of individual and general, from ignorance to knowledge, from blind to consciously, from necessity to freedom. That every step forward, are reciprocating twists and turns, all through the dialectical combination of "split in two" and "merge two for one". It is obvious that people understanding of the development of the statistical nature also follow such a process, from its beginning to the formation and development, to split into two rival, to the unity of the fusion and dependent and finally establish the true sense of "statistical", this should is an inevitable path.

THE UNDERSTANDING OF BIG STATISTICS

In fact, the word "big statistical" was first founded in 1992, owing to the national bureau of statistics, puts forward the statistical belongs to the secondary discipline to rise to the level of discipline of economics background. Since then, the understanding of the "big statistics" and academic debate mainly exist the following statement:

Firstly, it's put forward based on the viewpoint of large statistical subject. There are a few people think "big statistical" includes various statistics, besides contains a variety of statistical theory and methods. Most people think of "statistical" is the fusion of social and economic statistics and mathematical statistics. Professor Dong Qiu (1995)^[12] is strengthen the application of mathematical statistics method based on the social and economic statistics, and to break the pure theory or method of mathematical statistics, he studied the model on the basis of the proposed the thinking of "statistical" discipline. But he also noted that statistical ideas intention should be "open" and "tolerance". Opposite of scholars argue that social and economic statistical and mathematical statistics is the different nature of the discipline, can't be together, they can only be "long-term coexistence, mutual penetration, using each other, common development".

Secondly, it is put forward based on the viewpoint of statistical education idea. Professor Ken He (1995) argued that large statistical education thought is determined by the statistical idea, put forward the idea according to the large statistical modern statistics can be divided into three parts: statistical theory, statistical methods and statistical techniques. So he put forward that in the school education, we should pay attention to the theory of statistical personnel, the application of statistical personnel and technical personnel. In big statistical theory of statistical education thoughts, mainly including: the applicability of the setup of school education, teaching content and comprehensiveness, the relationship between theory and practice.

Thirdly, it is put forward based on the viewpoint of large statistical enterprises. Statistics and workers, enterprises adhere to the "big statistics", is to have the consciousness of overall situation, not only statistical data to the new, regional wide; And the quality of statisticians, participation to thick, statistical work to high degree of automation, put equal emphasis on planning and statistics, improving the status of the enterprise statistics. Shouxian Luan (1995)^[13] is proposed to "statistical" have vitality to this research topic, the Liao river oil field is the main statistical work of how to follow the thinking of "big statistical", for the enterprise development localization, set up enterprise "statistical" thoughts.

Fourthly, it is based on the viewpoint of large statistical science. Think "big statistics" is a statistical science, namely large statistics. Compared with the original statistics, the statistical object of study, statistical method, application scope, theoretical research and application research on fusion, subject status rise. That is to say, the big statistics to extract and sum up the new theory, new method and new ideas, rather than the social economic statistics, mathematical statistics and other statistical simply combine or merge, is the "statistics" in the broadest sense of the term. De-qun Zhou, Chen book (1997) proposed the "statistics" scientific architecture frame the research subject.

This paper argues that the classification has its rationality, but it is hard to avoid some understand based on their academic perspective, proposed the limitations of is all the more thinking and understanding of bias, if we went up from the overall macro understanding, or the fourth explain is more scientific. Therefore, the following will be explained in the fourth, on the basis of the proposed "split in two" dialectical analysis to reknow under "becoming one" in the connotation of "statistical". Based on some scholars put forward the statistics are divided into three levels: theoretical research, the method of research, application research on, this article put forward from the combination of statistical and scientific theoretical research, statistical method and the method of combining, the combination of research, statistical and application.

The Combination of Research and Statistical

Any science to be attention and researched, the reason is always stems from its practical value. Though we often discuss the theory value and practical value, but the ultimate goal is to strengthen practice, because we need the theory in the process of practice guidance, when there is the combination of theory and practice of "science". It is obvious that "science is to sort out the facts, to find the rule that concluded" (Charles Darwin, 1888), that fact and law., in turn, some scholars put forward, the science is based on practice, after practice test and strict logic reasoning, is to reflect the objective laws of real world phenomena of knowledge, from which you can see, describe the three key words is: "science" practice, demonstration, knowledge system (or theory). Then we can analysis, the combination of practice and theory is not subjective and objective, but needs constant arguments and reasoning. The fact is, however, in the sense of scientific theory and the real world of science is distinct. Because in human limited ability cannot be fully observed real and objective world, the so-called

"scientific" conclusion is still only the probability of a fact inference. So people in the way of the pursuit of science can only approximate the real world, forever and can never fully reveal the real world. In that case, we have reason to think that looking for a way to try to close to the real world of science has very important significance. More than 300 years ago, statistics is in the form of possess unique scientific method has been applied, development so far.

"statistical" is defined as: statistics is a science, is a multi-disciplinary overlapping fusion, applications of science by some scholars at home and abroad based on the perspective of science^[12]. ISC standing director of the office of Zoltan Kenessey also suggested, "statistics is a set of science". Now that we can take statistics as a science, so there is no doubt that it must have scientific argument theoretically, follow the unity of opposites, which is split in two, one of the law of development.

In reality, we can see: At present, based on the statistical classification, science is generally recognized by the academia and the main two camps: mathematical statistics and economic statistics disciplines. At the same time, based on our current understanding of them, think "mathematical statistics" in the overall population methodology of information science is the study of random phenomena, social and economic statistics is the study of social economic phenomenon overall number of the methodology of information science. If we use the analysis method of "two", we could find that the "one" is scientific methodology, and the research objects of "two" is different. That has confirmed in the encyclopedia britannica book: although the statistics has the branch of mathematical statistics and economic statistics, but they are belong to methodology of science overall. Mathematical statistics is the science methodology of random data, economic statistics is the science of deterministic data methodology. In fact, in the early development of statistical and mathematical statistics is dominant, the social and economic statistics and with the application and research development in the field of mathematical statistics and dynamic, development so far, the social and economic statistics also show it to be reckoned with the influence of academic debate is also continuing to them, this article thinks that should fully respect and allow them to play an advantage in their respective fields, also cannot ignore their existence question and the insufficiency, the absolute isolation and fragmentation is not conducive to the real development of statistics, which will become the fusion of "statistical" thought should be the inevitable developing trend of statistics, which are proving the statistics as a science "in two, becoming a" argument.

The Combination of Statistics and The Methods

Since that we have shown statistical is a science, so let's think about: how to carry on the thorough research on a science? Practice has proved that first of all, we should establish problem consciousness, then can we find the effective methods for problems. Guangrong Tong, Tiezhuang Lu (2010)^[4] also think statistical problems can be divided into two categories, namely description statistics and statistical inference. Describing statistics are sometimes referred to as data processing, and statistical inference is based on the data (samples) for processing to infer the overall (matrix). Based on this, we can assume that there are two kinds of statistical method, statistical method and inferring statistical methods described. The so-called descriptive statistic method is through the graphics, lists, quantification measurement method to describe the basic features of sample data, such as a statistical method, concrete operation, such as, through frequency distribution tables and graphic method of data visualization processing, and then use focus measure and the number of variance method to get to know each variable observation value of the concentration and dispersion, can't deny that this job is very basic and important, but because it is just on the sample data carries on the preliminary summary and refining, does not contain any statements about the error precision, so the conclusion is only limited to the sample data, has nothing to do with the overall, thus there is no inference problem. And statistical of the ultimate purpose is to hope that through sample to obtain overall information, so the inference statistics, it is using the sample information and other information (usually a priori information) to infer the overall number of measure method, it become the inevitable outcome of the statistical methods described further development. Thus we can use "split in two" the analysis of the development of statistical methods, "one" that is, they are using the method of data, "two" : using data to research the object is different, one is to sample the data itself, the other is to overall speculate with sample data. Thus, we can see the description statistics and infer the statistics is a statistical method of two components, between them is not split and independent, but each other fusion and development of both "merge two for one" construct the integrity of the statistical system.

The Combination of Statistical and Application

In actual work, the combination of statistical and application is often associated with the development of statistical methods is, due to the constant improvement of the statistical method, makes the combination of statistical and applied more and more close, its contribution to the social economy is becoming bigger and bigger. As some scholars referred in the study, the statistical should be independence, and develop the statistical methods. Statistical is neither a pure mathematics, nor economics, and it should be developed in the application of statistics. Professor Dong Qiu in the article of «look from the market to achieve the bridge role of statistical method», this article mentioned the "bridge" between the empirical analysis and statistical theory, this is because on the one hand, statistical studies require the system to external stimulation, application methods and pure theory research, all need to real life questions, will definitely, then internalizes statistical science subject to sublimation; Statistical scientific research need externalization, on the other hand, for the society provide empirical analysis tools, you need to get statistical resources you will need to scientific research and development. Combination together, will form the virtuous circle of the statistical research in the process of this cycle, the application of statistical methods (the study of statistical methods for how to apply) is very important, at the same time it should combine in the study of statistical applications (which USES statistical methods to study the actual phenomenon). Thus believe that the combination of

statistical and application can include two parts: the application of statistical methods research and applied research, between the two are complementary and mutually reinforcing, as Professor Dong Qiu proposed statistical research cycle, internalization and externalization, the outer stimulation, statistical method is applied to study also need to constantly innovate and improve the suitable new method of solving practical problems, and statistics applied research also need to internalize, namely found in using a statistical method of defects or deficiencies cause to comparative study of statistical methods to study actual phenomena to find a more suitable method.

CONCLUSION

At this point, we can see that the statistical is a science, it fulfills the unity of opposites from the ontological argument, as a result, we are on the application of the statistical science, statistical method and statistical epistemological must also follow the "split in two" and "merge two for one" law of the unity of opposites of dialectical development. This paper argues that only to grasp the essence of statistical and rule that we can truly know statistics, understand the statistics, ultimately better applied statistics. In this paper, the research is still of theoretical research, but for the next application research not have fundamental effect, because the ultimate goal of statistics is in the service of the development of social economy, how to better the application of statistics to solve practical problems, meet the needs of the society is our next research direction.

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